

Claims:

1. A separation membrane for a rechargeable battery, comprising:  
a plurality of composite layers attached to each other, each of the composite layers comprising a plurality of molecular layers;  
wherein each of the molecular layers comprises a plurality of equilateral triangle units, each of which has three lithium ions at three vertexes thereof and a carbon atom at a center thereof.
2. The separation membrane as described in claim 1, wherein the number of the composite layers is in the range from 5 to 20.
3. The separation membrane as described in claim 2, wherein the number of the composite layers is 10.
4. The separation membrane as described in claim 1, wherein a thickness of each of the composite layers is in the range from 500 nanometers to 500 microns.
5. The separation membrane as described in claim 4, wherein the thickness of each of the composite layers is approximately 100 microns.
6. The separation membrane as described in claim 1, wherein a thickness thereof is approximately 1 millimeter.
7. The separation membrane as described in claim 1, wherein a length of each side of each of the equilateral triangle units is in the range from 25 nanometers to 100 nanometers.
8. The separation membrane as described in claim 1, wherein the composite layers are attached to each other with adhesive.

9. A separation membrane for a battery, comprising:

a plurality of composite layers attached to each other, each of the composite layers comprising a plurality of molecular layers;

wherein each of the molecular layers comprises a plurality of equilateral hexagon units, each of which has six carbon atoms located at six vertexes thereof and six lithium ions intercalated therein.

10. The separation membrane as described in claim 9, wherein a length of a diagonal of each of the equilateral hexagons is in the range from 50 to 200 nanometers.

11. The separation membrane as described in claim 10, wherein the length of the diagonal of each of the equilateral hexagons is approximately 100 nanometers.

12. A separation membrane for a rechargeable battery, comprising:

a plurality of composite layers attached to each other, each of the composite layers comprising a plurality of molecular layers;

wherein each of the molecular layers comprises a plurality of equilateral triangle units arranged in an alternative/staggered manner so as to form a hexagonal extension thereof, wherein each of the equilateral triangle units has three lithium ions at three vertexes thereof and means for attracting said three lithium ions at a center thereof.

13. The separation membrane as described in claim 12, wherein said means is carbon, or silicon, and or germanium.

14. The separation membrane as described in claim 12, wherein each of said

molecular layers defines silicon carbide, or silicon oxide, or compositions of carbon and silicon carbide, and or compositions of silicon and germanium thereof.

15. The separation membrane as described in claim 12, wherein a diagonal of each equilateral hexagon of said hexagonal extension, which passes through a center thereof, is in a range of 50 nanometers to 200 nanometers.
16. The separation membrane as described in claim 12, wherein each of said equilateral triangle is nanosized.